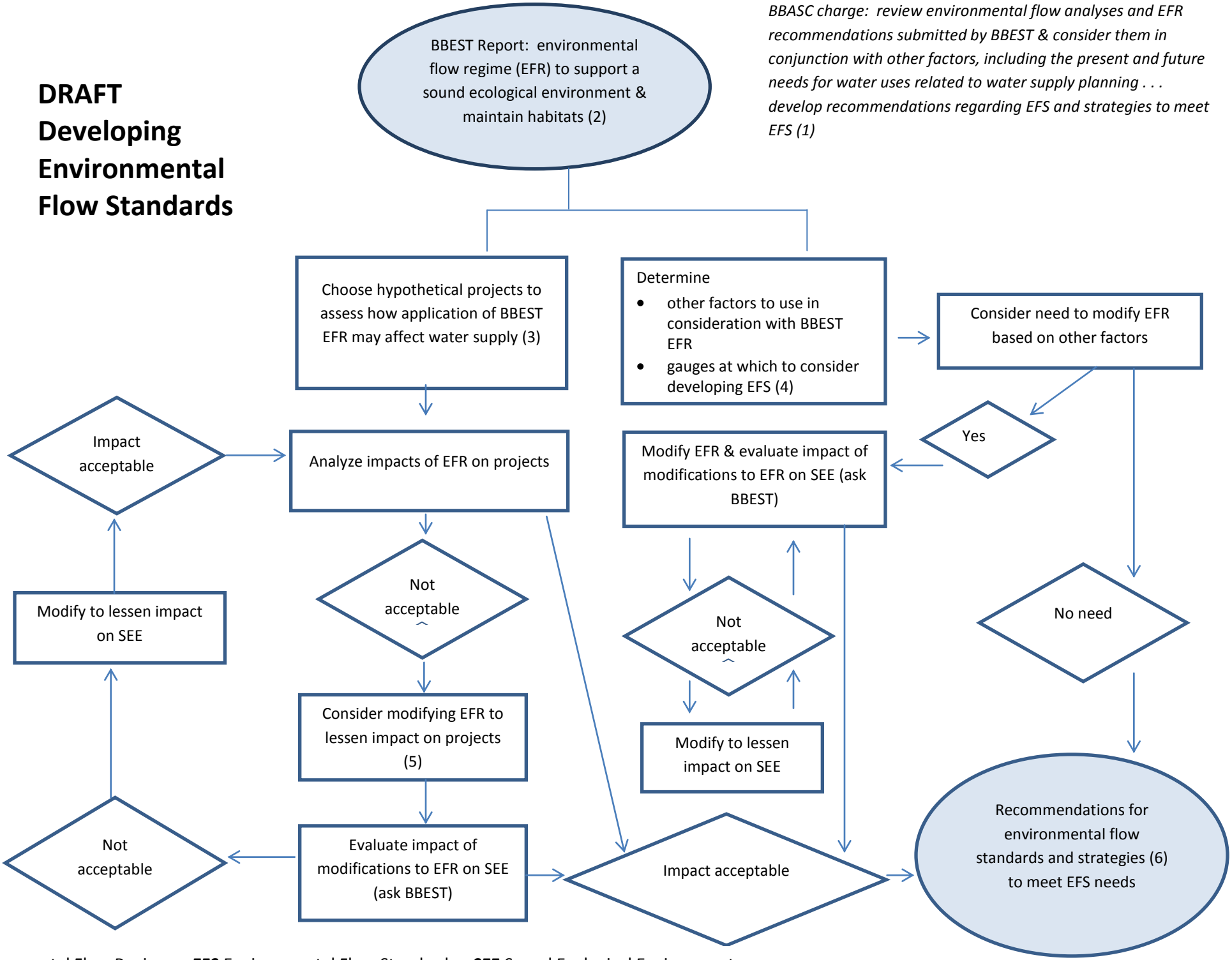
DRAFT Developing Environmental Flow Standards

BBASC charge: review environmental flow analyses and EFR recommendations submitted by BBEST & consider them in conjunction with other factors, including the present and future needs for water uses related to water supply planning . . . develop recommendations regarding EFS and strategies to meet EFS (1)



EFR Environmental Flow Regime **EFS** Environmental Flow Standards **SEE** Sound Ecological Environment

(1) The BBASC is charge to develop recommendations for environmental flow standards and strategies to meet environmental flow standards in Texas Water Code Section 11.02362 (o):

> *Each basin and bay area stakeholders committee shall review the environmental flow analyses and environmental flow regime recommendations submitted by the committee's basin and bay expert science team and shall consider them in conjunction with other factors, including the present and future needs for water for other uses related to water supply planning in the pertinent river basin and bay system. {Language related solely to Rio Grande basin is omitted} The basin and bay area stakeholders committee shall develop recommendations regarding environmental flow standards and strategies to meet the environmental flow standards and submit those recommendations to the commission and to the advisory group in accordance with the applicable schedule specified by or established under Subsection (c), (d), or (e). In developing its recommendations, the basin and bay area stakeholders committee shall operate on a consensus basis to the maximum extent possible.*

(2) The BBEST is charged, in Water Code Section 11.02362 (m) to

> *. . . develop **environmental flow analyses** and a recommended **environmental flow regime** for the river basin and bay system for which the team is established through a collaborative process designed to achieve a consensus. In developing the analyses and recommendations, the science team must consider all reasonably available science, without regard to the need for the water for other uses, and the science team's recommendations must be based solely on the best science available. . . . (Emphasis added)*

The terms noted in bold are defined in Texas Water Code 11.002 as follows:

> *(15) "Environmental flow analysis" means the application of a scientifically derived process for predicting the response of an ecosystem to changes in instream flows or freshwater inflows.*
> *(16) "Environmental flow regime" means a schedule of flow quantities that reflects seasonal and yearly fluctuations that typically would vary geographically, by specific location in a watershed, and that are shown to be adequate to support a sound ecological environment and to maintain the productivity, extent, and persistence of key aquatic habitats in and along the affected water bodies.*

(3) Choose hypothetical projects to assess how application of BBEST EFR may affect water supply. Hypothetical projects are used as illustrative to evaluate how potential environmental flow recommendations may impact water supply potential and flows in the basin. The Brazos BBASC has chosen one project in the upper basin and one project in the lower basin to represent different conditions in the basin, thereby providing a way to see differing impacts without having to conduct such analyses on multiple potential projects or gauge locations. Using

projects will allow iterative modeling to occur: first to see the impacts of the BBEST EFR on the hypothetical projects, then to see how any modifications to the EFR would impact the project as well as a sound ecological environment.

(4) Gauges: Selecting at what gauges (or measurement points as TCEQ refers to them in their rules) to develop environmental flow standards. The immediate past two BBASCs have provided EFR for all gauges from the BBEST report, and the TCEQ has adopted EFS for all such gauges. The Brazos BBEST has recommended using all gauges. The BBASC is free to modify the BBEST gauge recommendations, but documentation of the reasons for such change is suggested to provide TCEQ with an understanding of the reasons.

Other factors: The BBASC is charged with considering the BBEST EFR in conjunction with other factors, including present and future needs for water for other needs. The project analysis provides one way to consider needs for the water for other uses. The BBASC is free to choose additional factors to consider, and has informally discussed some, including

- cost;
- ease of implementation;
- concerns over selecting flows that will cause flooding .

(5) Consider modifying EFR. The BBASC may modify the BBEST's environmental flow regime recommendations for any number of reasons {see note (4)}. Modifications may include changes to lessen the impact on water supply. This may be done by modifying the flow components, by exempting certain small permits from some of the EFR components (such as pulse flow components) etc.

(6) Environmental flow strategy development is not illustrated on this chart. Strategies are developed to provide for achievement of the recommended environmental flow standards. The Science Advisory Committee notes about strategies:

> *The environmental flow standards recommendations will depend both on (hydrologic) analyses …and on consideration and evaluation of what strategies might be used to ensure that achievement of the recommended flow standards is not impaired. SB 3 does not set out specific terms for the development of strategies, so the BBASCs have broad leeway to examine potential avenues for implementing flow standards. For example, they could agree to analyze how changes in operation of major reservoirs, dry-year leasing of water rights, dedication of return flows, or other strategies can be used to help meet standards.*

Science Advisory Committee, Discussion *Paper: Moving from Instream Flow Regime Matrix Development to Environmental Flow Standard Recommendations*, February 16, 2010